

Ministry of New and Renewable Energy

**Jawaharlal Nehru National Solar Mission
(Off-grid and Decentralized Solar Applications)**

Format for Submitting Project Proposals

Mini - Grid SPV Power Plants (Maximum SPV Capacity: 250 kWp each)

PART-A: General Details of the Project

1. Title of the Project

Total kWp SPV Capacity

2. Name of the Project Proponent

Name, Designation and Address of the Authorized Representative
for correspondence with telephone No. Fax & Email (Web site, if any)

Category of Project Proponent

- a) Renewable Energy Service Providing Company (RESCO)
- b) Financial Institutions (Banks, NBFCs, MFIs)
- c) Financial Integrator
- d) System Integrator
- e) Program Administrator

In case of (e) above, Please indicate:

Government Department, Autonomous Institution set up by
Central/ State Government, State Renewable Energy Development Agency,
Public Sector Undertaking

3. Executive Summary of the Proposal

4. Socio- Economic Justification of the Project

5. Benefits of the project (diesel savings/ others, if any)

PART-B: Details of the Project Proponent

- i. In case of a),b),c) & d) the following Information to be provided:
 - a. Whether commercial or non-commercial.
 - b. Copy of Article of Association, Registration No. & Date; PAN/TAN No.
 - c. Audited Balance Sheet for last three years.
 - d. Annual Report of previous year.
 - e. Whether MNRE has earlier sanctioned any SPV projects for implementation to the Project Proponent?
if yes, please furnish information

- b) Others

PART-C: Details of the Project

1. Details of Project site: (State, District/ City, Block, Panchayat, Village/ Hamlet and accessibility to site)

- i. Address of the proposed site
- ii. Name and census code of the village
- iii. How to approach the site (Access Details)
 - a. By train ...Nearest Railhead
 - b. By Road... Nearest Town
- iv. Map of the site showing:
 - Approximate location of the proposed power plant, control room, Poles/ lampposts, extension lines, beneficiaries of electricity and estimated distances from the control room.
 - Existing Transmission Line (if it exists at site, provide details)
 - Proposed Transmission Line (over ground/ underground)

2. Details of Project Beneficiaries

3. Details of Proposed Power Plant

a. Location/ site details

- i. Location of the proposed plant
- ii. Land Ownership
- iii. Solar radiation level
- iv. Longitude, latitude, average temperature, sunshine hours

- a. (Please specify the source and nature of data if available)
- v. Information about other meteorological parameters
- vi. Height above sea level
- vii. Population of the village (s) to be covered by the Solar PV Plant/ Mini Grid.
- viii. No. of households to be covered

b. Power Plant Details

- i. Proposed capacity of the SPV Power Plant
- ii. Availability of shadow free south facing land area for the power plant
- iii. Details of loads to be energized by Power Plant
- iv. Storage battery capacity proposed
- v. Inverter & Charge controller details (Please elaborate)
- vi. Calculations and justification for the proposed capacity (Please elaborate)
- vii. Expected annual energy generation
- viii. Building for housing the battery bank and plant control systems
- ix. Details of Distribution Network
- x. LT/HT Transformer, if proposed

4. Details of electrical load of the village

- i. Total Electrical load of the village (Please specify the source of data)
- ii. Is it proposed to meet the entire village load
- iii. Household loads to be serviced by the PV plant
- iv. Street Lights load
- v. Common loads of the village(s) (Please provide details of each Building/ institution like Panchayat Bhawan, School, PHC, Dak Ghar, CSC, etc)
- vi. Drinking Water needs (No of wells/tube wells/ Pump-sets, estimated requirement of water, water table etc.)
- vii. Commercial loads if any
- viii. Irrigation pump sets/ RO plant load
(Time duration for supply of power for each category of load and Load management details should be provided)
- ix. Any other load

5. Technology Description & System Design /Specification

- i. Line Diagram of the complete System with details of Mini Grid
- ii. Total Capacity of the proposed Solar PV Power Plant (KWp)
- ii. Power of each PV Module
- iii. Number of modules and total array capacity

- iv. Solar Cell technology & Module efficiency proposed to be used
- v. Details of Tracking of PV Array (if proposed)
- vi. Designed peak power of PV power plant/project
(Please provide design details to justify the capacity of the plant to meet the proposed loads)
- vii. Annual and monthly energy output (expected)
- viii. Annual availability of solar radiation
- ix. PCU/inverter capacity with detailed specifications
(Details of quality of output power)
- x. Number of PCU/inverters proposed to be used
- xi. DC Bus voltage
- xii. Capacity of battery bank (Current & Voltage)
- xiii. Type of battery proposed and estimated cycle life
- xiv. Operational limits of the system
- xv. Details of protections to be deployed on PV array and AC output side
- xvi. Details of Metering, Indication, Data logging operation
- xvii. Pre-paid meters to be used, if any.
- xviii. Schematic diagram of the system including protecting interlocking devices, monitoring and data logging points to be provided.
- xix. Details of training of manpower to be provided for successful operation of the plant.

6. Details of Proposed Mini-Grid

- i. Estimated total length of the distribution grid (length of each distribution line and no. of households proposed to be covered through that line)
- ii. Output Voltage at each distribution line
- iii. Connected load at each distribution line
- iv. Estimated losses in distribution lines

7. Existing Grid Details?

- i. Capacity of transformer available for evacuation of power.
- ii. Voltage at the bus bar
- iii. Load at the grid
- iv. Power factor at the bus bar

8. Details of System Components

Component	Make and Model	Capacity	Numbers	Indigenous/ Imported
PV Module				
Power Conditioning Unit Charge Controller Inverter				
Storage Battery Bank				
Data Acquisition System				
Distribution Transformer/ Cables/ Poles etc.				

9. Details of Building to Install the Battery Bank, Electronics and Control Panel

- i. Whether any existing building is to be used, if so, details of ownership, area available, and layout plan etc. to be provided.
- ii. If a new building is proposed, area, estimated cost and layout etc to be provided

Notes:

- It is mandatory to provide technical performance specifications of each component of the power plant proposed to be installed under the project and for which the performance will be warranted.
- All technical parameters and warranty requirements must meet or exceed the requirements mentioned in the guidelines issued by the Ministry.

PART D: Operation and Maintenance Arrangements

- Details of Operation and Maintenance Arrangements.
- Arrangements for Generation Data Collection (applicable for SPV Power Plants / Mini Grids having more than 10 KWp capacity).
- Training of the O & M Personnel of the Beneficiary Organization

PART E: Project Duration and Implementation Schedule

- completion schedule with milestones

PART F: Performance Monitoring Mechanism:

- Details of Data Monitoring on Daily, Monthly and Annual energy generation (Data logging and compilation and sharing with MNRE)

Please provide details in the following format

Own Mechanism	
Third Party	
Remote Monitoring (for SPV power plants / mini grids having capacity above 10 KWp)	

PART G: Project Cost and Financing Details.

Break up Project Hardware Cost :

S. No.	SPV Power Plant capacity (kWp)	Cost in Rupees					Total
		Module	Battery	Inverter	Structures	Balance of System	

Costing:

i. Cost of Systems Hardware	Rs.
ii. Cost of transportation and insurance	Rs.
iii. Cost of civil works and electrical works	Rs.
iv. Cost of distribution network	Rs.
v. Cost of installation and commissioning	Rs.
vi. Cost of Annual Maintenance for 5 years	Rs.
vii. Any other related costs	Rs.
Total Cost of Power Plant	Rs.

Means of Finance

a) Envisaged CFA from MNRE	Rs.
b) Contribution of Beneficiaries	Rs.
c) Contribution of Project Proponent	Rs.
d) Other Source (s) of Funding	Rs.
e) Envisaged Soft Loan assistance, if any	Rs.
Details of Revenue to be collected with payback & IRR	Rs.

PART H: ANY OTHER INFORMATION

PART I: Declaration and Certificate (To be furnished by Implementing Agency)

1. It is certified that I/we have read the guidelines issued by the Ministry vide 5/23/2009/P&C dated 16th June, 2010 and the related provisions/terms and conditions for availing central financial assistance (CFA) from the Ministry of New and Renewable Energy and I agree to abide by these guidelines and related terms and conditions.
2. It is to confirm that the present proposal in full or part has not been submitted / has been submitted to any other agency for seeking support (In case proposal has been submitted to any other agency or under consideration all details and a copy of the proposal must be submitted along with the present proposal).
3. This is to certify that the various components of the SPV systems/ power pack/ plant/ pump will conform to the Relevant Standards, as mentioned in the Guidelines for Off-grid and Decentralized Solar Applications (Annexure-3) for SPV modules and components under JNNSM. Copies of the Relevant IEC/ BIS Certificates should be enclosed.
4. Failure to comply with these guidelines will result in denial of CFA by the Ministry.
5. I agree to put photograph of the system and beneficiary on my website for all systems above 1 kW.

It is to confirm that in case of any dispute, the decision of Secretary, Ministry of New and Renewable Energy, Government of India will be final and binding on all.

Signature _____

Name & Designation of Authorized Signatory* of Implementing Agency

Place:

Date:

*Authorized signatory should be in the rank of General Manager of SNA/PSU or MD/CEO/Director in case of Channel Partner.

CERTIFICATE
(To be furnished by SNA/PSU/Channel Partner)
(Only for Solar Pump, Power Pack/ Power Plant)

This is to certify that Shri..... (name & designation) of..... (organization) visited the proposed site on (date) ... and found that there issqm. of south facing shadow free area is available at the site for installation of the solar pump/ power pack/ power plant. The latest Photograph of the front view of the proposed site with date is enclosed with the certificate. After installation photograph will be taken in same view and will be submitted with completion report.

Signature _____
Name & Designation
of Authorized Signatory*
of SNA/PSU/Channel Partner

Place:

Date:

* Authorized signatory should be in the rank of General Manager of SNA/PSU or MD/CEO/Director in case of Channel Partner.